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Biological Services Program

November 1977

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POLICY GUIDELINES ON ECOLOGICAL INFORMATION AND TECHNOLOGY MANAGEMENT

FY 1978

Fish and Wildlife Service

U.S. Department of the Interior

November 1977

POLICY GUIDELINES
ON ECOLOGICAL INFORMATION
AND TECHNOLOGY MANAGEMENT
FY 1978

Biological Services Program
Fish and Wildlife Service
U.S. Department of the Interior
Washington, D.C. 20240

ADDRESS ONLY THE DIRECTOR,
FISH AND WILDLIFE SERVICE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
WASHINGTON, D.C. 20240

November 21, 1977

Memorandum

Hester 11-21-77

To: Associate Director-Environment and Research

Acting
From: Chief, Office of Biological Services

Subject: Policy Guidelines on Ecological Information and Technology Management

As a further step in the development of Regional Biological Services Teams, we have prepared the attached Policy Guidelines. This document will be used as general guidance in the development of procedures for implementing this effort in FY'78.

The next step involves the workshops and related activities through which we will address and develop such procedures as user needs identification, information development, dissemination and use evaluations.

The guidelines apply to the FY'78 effort. They are of necessity quite general. We plan to make them more specific as the procedures are developed and experience is acquired.

Joseph E Townsend

Attachment

Concur: F. Eugene Hester
Associate Director-Environment and Research

Date: Nov. 22, 1977

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INTRODUCTION

These guidelines summarize to this time the policy guidance, management strategies, and implementation plans for the development of a national and regional capability for ecological information and technology management.

PURPOSE OF THE POLICY

Consistent with the goals and objectives set forth in the Habitat Preservation Program Management Document, these guidelines establish the policy, strategies, and plans for implementing a strengthened ecological information and technology management capability within the Biological Services Program. General policy guidance is provided to develop the necessary organization, management procedures, and program of training during FY 1978 to implement the national and regional capability. Subsequent guidance will become more specific as procedures are developed and experience is acquired.

ORIGIN OF THE POLICY

The policy, which evolved during FY 1977, essentially draws on a series of meetings, reports, and discussions that occurred during the year.

- Report of the Task Force on Regional Information and Technology Transfer, Biological Services Program, May 1977, which recommends actions to implement a strengthened regional information and technology management capability.
- Memorandum of the Associate Director - Environment and Research on Implementing Regional Information and Technology Transfer, July 19, 1977, which modifies the Task Force recommendations and solicits the response of the Regional Directorate.
- Discussions in the Regions between Biological Services Program representatives and the Regional Directorate during August 1977, followed by written response to the Associate Director - Environment and Research.

- Working Paper of the Information and Technology Transfer Committee on the Roles and Responsibilities in the Biological Services Program, October 1977, which provides additional guidance contributing to a policy position.
- Program Advice Amendment for the Biological Services Program, November 1977, which implements the strategies for ecological information and technology management in FY 1978.

The Report of the Task Force on Regional Information and Technology Transfer and the Working Paper of the Information and Technology Transfer Committee are appended. These documents were instrumental in defining a new organization and in providing a broad framework for procedures for information and technology management that will result from implementing the policy. Further detail will be provided by the ecological information and technology management procedures as they are developed.

CONTENTS OF THE POLICY GUIDELINES

These guidelines are developed in Part I, containing the Policy Statement, Management Strategies, and Implementation Plans.

The concise policy statement highlights the position on the key issues involved in ecological information and technology management:

- Priorities for ecological subject area coverage.
- Primary users of the ecological information and technology to be provided by a strengthened national and regional management capability.
- Respective roles and responsibilities of the new Biological Services Regional Teams, established National Teams and Groups, and Headquarters.

Following the policy statement, two basic strategies for implementing the new policy are given. One is a strategy for improving Biological Services Program effectiveness by establishing Regional Steering Groups and Regional Teams. The other strategy details the distinct roles and responsibilities of the three organizational units--Regional Teams, National Teams and Groups, and Headquarters--with respect to five basic steps of information and technology management.

Then, plans for implementing the new policy and strategies are presented. There is a brief discussion of the development of a detailed manual of ecological information and technology management procedures during FY 1978, followed by a capsule description of the FY 1978 Program Advice Amendment that implements the new policy.

Part II contains a background discussion. In this section, established policy and strategies of the Habitat Preservation Programs that are closely related to the new policy are presented as a framework. Then, the current status of the Biological Services Program and the evolving policy and strategies of the Department of the Interior dealing with ecological information and technology demands of the entire Federal establishment are cited to provide a fuller perspective. This discussion also includes the current proposal of the Assistant Secretary for Fish and Wildlife and Parks to establish a Federal Ecological Survey and Analysis Program within the Habitat Preservation Programs of the U.S. Fish and Wildlife Service.

PART I

POLICY STATEMENT

The following policy statement on ecological information and technology management will guide further development of a regional and national capability within the Biological Services Program. More detailed guidance in the form of management strategies is presented in a subsequent section.

SCOPE OF SUBJECT AREA COVERAGE

It is the intent of the information and technology management policy to initially concentrate on ecological issues and problems being addressed by the Habitat Preservation Programs. It is expected, however, that some margin of latitude will allow limited coverage of other Service Programs. The subject area focus must be principally on those environmental issues and problems for which specific monetary and personnel resources have been budgeted--coal and mineral extraction, stream alterations, coastal ecosystems protection, and others. Ultimately, the policy intent is to provide comprehensive coverage of all major issues and problems.

The present Biological Services cadre in the Regions and the National Teams and Groups are budgeted to work largely in specific environmental areas represented by the Habitat Preservation Programs. Although habitat protection is essential to accomplish the goals and objectives of other Programs, such as the identification of critical habitats for endangered species, these associated needs should be served within the overall context of subject matter skills and resources available to the Biological Services Teams. Additional skills and services desired by other Programs, such as major information search, data synthesis, publications, and workshops would have to be additionally funded by the appropriate Program Managers.

As resources become available, the policy is to cover the full range of environmental subject matter handled by Service Programs providing the appropriate support. For example, additional funding would be required to add skills to the Biological Services Teams to serve a Program dealing with issues and problems of range management.

INTENDED USERS AND SUPPLIERS

As a matter of policy, the initial primary users and suppliers of the new regional information and technology management capability will be:

- Users--Land and Water Resource Development Planning Program and other Service Programs requiring information and technology for habitat protection (Endangered Species, Migratory Birds, Anadromous Fish, etc.), as well as selected Federal and State programs strongly related to the Habitat Preservation Programs.
- Suppliers--National Teams and Groups and Regional Teams of the Biological Services Program, as well as selected Research Centers supporting the Habitat Preservation Programs and selected outside sources.

The rationale for this approach is that the top-priority needs for ecological information and technology relate to environmental impact assessment, which is the focus of the Habitat Preservation Programs. The intent is to serve not only users within the Service, but States and other Federal agencies as well, because the Service is working toward functioning as a national repository of ecological knowledge. In selecting priorities where resources are limited, the intent is to secure a balance among internal and external users.

There are many primary external users, and some of these users should be served during the first stage of regional information and technology transfer operations. It must be emphasized that Service suppliers have the responsibility for responding to the needs of external users, especially related Federal agencies such as the Forest Service, the Bureau of Land Management, and the Corps of Engineers. This is in keeping with the Federal ecological survey role envisioned for the Biological Services organization.

The Regions should be responsible for striking a balance between external and internal program needs. Some interagency program requirements may outweigh certain internal priorities if associated resource impacts are potentially more damaging or if interagency transfer funds are involved. Further guidance may be required from the Program Manager for balancing internal and external user priorities consistent with the proposed new role of the Service as the "ecological arm" of the Federal Government.

ORGANIZATIONAL RESPONSIBILITIES

The planned ecological information and technology management activities will be implemented through the coordinated efforts of the Biological Services Regional Teams, National Teams and Groups, and Headquarters. Their respective roles and responsibilities are described in greater detail below under Management Strategies. Here the policy intent is outlined in more general terms. The distinctions in roles and responsibilities are meant to be flexible. Although there will be a different emphasis for each organizational unit, roles will be more complementary than overlapping.

The Regional Teams will emphasize: identifying information and technology needs involving areawide or localized problems specific to their individual Regions; communicating identified needs of each Region to suppliers of information and technology within the Region, as well as to National Teams and Groups; and managing regional Biological Services studies, developing regional information systems, and providing technical assistance to regional users. In addition, the regional Teams will disseminate products to regional users and will evaluate the utility of the Biological Services Program output to regional users.

The National Teams and Groups will emphasize: identifying needs involving issues transcending the problems specific to an individual Region; communicating needs to Headquarters; designing and managing national and multiregional studies, developing information systems, and conducting applied research; disseminating products nationally or in a number of Regions; and evaluating products and services in terms of national or multiregional needs.

Headquarters will emphasize a different set of activities, that is: identifying and communicating national trends and needs of programs external to the Service; recommending allocation of resources for information and technology development and coordinating with external suppliers; making a national distribution of products; and independently assessing the effectiveness of Biological Services products in fulfilling Program goals and objectives.

Headquarters has the additional responsibility for coordinating the development of the necessary organization, systems, procedures, and staff training that are required to implement the ecological information and technology management effort.

MANAGEMENT STRATEGIES

Access to information and technology and their adaptation to the exact needs of resource planners and decisionmakers are the keys to responsible ecological planning and problem solving. Ensuring such access requires the capability to transfer synthesized information, together with techniques for its effective utilization, within the Service and to a wide variety of other Federal, State, intergovernmental, and private users. The actual application of relevant information and technology to the solution of problems relating to the preservation and enhancement of the Nation's fish and wildlife resources is therefore the primary benefit to be derived from a Program implementing this policy.

IMPROVING PROGRAM EFFECTIVENESS

Because of the mounting demands of competing interests for the use of land and water, especially for energy and agricultural development, a comprehensive ecological data base requiring long-range development is an imperative. In addition, greater efforts to synthesize existing, accessible data and research findings that focus on the short-range information and technology needs of the Service and other primary users are urgently called for. This applies particularly to the regional operations of the Service, where specialized or localized information synthesis and technical assistance are in great demand. Finally, special efforts to ensure the actual utilization of information and technology are essential.

Information and technology transfer should occur, however, as a tailored response to communicated needs and priorities; the information and technology should reflect the viewpoints of both the potential users and the prospective suppliers. Suppliers such as the National Teams and Groups of the Biological Services Program are likely to possess the long-range areawide perspective and innovative outlook necessary to advance ecological problem solving, whereas the concerns of users are traditionally localized and confined to current crises. On the other hand, suppliers sometimes promote information and technology that is conceptually innovative without ascertaining its real usefulness.

Although the Biological Services National Teams and Groups, the Research Centers, and other Service Programs, as well as many outside Federal, State, and private institutions are now actively developing new ecological information and technology for habitat evaluation, environmental impact assessment, and other purposes, an effective information and technology management strategy should also provide an approach to:

- Better definition of users and their information and technology requirements.
- Procedures for communicating user needs through the program planning and budgeting process.
- Improved adaptation of information and technology to users' priorities.
- Packaging of products and dissemination of information and technology to meet users' needs.
- Monitoring the utilization of information and technology, including obtaining feedback on user satisfaction.

IMPROVING REGIONAL CAPABILITY

One major thrust in FY 1978 will be to strengthen regional capability to implement the policy delineated earlier. The Service is committed to strengthening the present information and technology management capabilities of the Biological Services Program by establishing Regional Teams, as proposed by the Task Force on Regional Information and Technology Transfer, to complement the National Teams and Groups and the Headquarters Office. Whether the present Biological Services Program will be further strengthened so as to implement the proposal of the Assistant Secretary for Fish and Wildlife and Parks for an Ecological Survey and Analysis Program to serve the entire Federal establishment, State and local governments, and the private sector remains to be resolved.

The new Regional Teams to be organized at the Regional Offices and at the Alaska Area Office will act primarily as brokers of ecological information and technology, linking the users and suppliers. In close communication with the Area and Field Offices, they will reinforce and provide perspective to localized or site-specific studies by providing areawide ecological information. The Regional Teams will initially represent the Habitat Preservation Programs, report to the Assistant Regional Directors for Environment, be guided by Regional Steering Groups, and include a Regional Team Leader, a Regional Information Transfer Specialist, Regional Activity Leaders, and Regional Coordinators.

Regional Steering Groups

The Regional Teams will be guided by Regional Steering Groups that will set policy and provide strategy affecting regional information and technology management. The Regional Steering Group will meet periodically to review Regional Team activities and performance, identify overall needs, recommend priorities, review operating procedures, revise schedules, and oversee administrative matters such as funding, staffing, training, and support contracting. The Regional Steering Group also will ensure that needs associated with habitat protection, arising from Programs other than Habitat Preservation, will be identified and that the priorities established for the Regional Team will reflect a wide regional viewpoint and will be set within the constraints of budgeted resources.

The Regional Steering Group should include the Regional Director, Deputy Regional Director, Assistant Regional Directors, Public Affairs Officer, and Area Managers. The participation of Area Managers is essential because their authority cuts across all Programs at levels in close contact with the primary internal and external users. The Regional Team Leader will be an *ex officio* member of the Steering Group, acting as liaison between that group and the Regional Team.

Regional Teams

The Regional Team Leader will serve as the supervisor of all Biological Services personnel within the Region and will be the full-time administrative and technical manager of the Regional Team, without specialized subject area responsibilities. The Team Leader will report to the Assistant Regional Director - Environment and will analyze ecological information and technology requirements and benefits. Working with all Regional Team members within their Biological Services Project categories, he/she will define and communicate needs for information synthesis, applied research, and technical assistance to the National Teams and Groups, Research Centers, and other suppliers.

The Regional Information Transfer Specialist will support the Regional Team by providing the tools and techniques necessary for the transfer of information and technology from a network of suppliers to a network of users. He/she will apply special skills in the uses of libraries, information search, data processing, computerized storage and retrieval, publications, workshops, and many other communication techniques. The Regional Information Transfer Specialist will be intensively engaged in guiding the dissemination of the information and technology products of Service suppliers, using print, audiovisual, and electronic media, and in monitoring the actual utilization of the products. Close coordination will be maintained with the Regional Public Affairs Officer as appropriate.

In addition to the new position of Regional Information Transfer Specialist, an allied position has been added to the Team in Alaska to support computerized applications of geographically based habitat evaluation data and other ecological information.

The Regional Activity Leaders presently within the Biological Services Program and appropriate Regional Coordinators will comprise the principal cadre of Regional Team members and will furnish the Team's principal effort. They will participate in identifying and communicating needs and establishing priorities, and they will assist in the development and dissemination of information and technology. They will continue to provide subject matter expertise within their assigned Biological Services Project categories, such as Coal, Oil Shale, and Western Water Allocation. The Regional Coordinators will supplement the efforts of the Regional Activity Leaders in several specialized areas, such as the National Wetland Inventory or Phosphate and other minerals.

The Regional Activity Leaders will have to combine direct representation of primary users, indirect representation of suppliers, and performance as transfer agents or brokers to establish their linkages. They will be expected to act aggressively, even to "market" the regional transfer capability and the information and technology output.

The Regional Teams will be expected to manage contract studies within the Regions as specially assigned by Program Advice or as needed to carry out regional activities of information and technology transfer. The Team members also will be expected to directly generate and disseminate some of the planned information and technology products and services. A regionally oriented, specialized need for information search or synthesis, repackaging of a contract study, or a technical short course might be handled better by the Regional Team than by a remote supplier, because it has better local knowledge and more flexibility for quick response than a National Team or Research Center.

ROLES AND RESPONSIBILITIES

The central function of information and technology transfer is to create and sustain efficient linkage between an organized network of primary users and a network of suppliers. To complete this prescription of strategies for ecological information and technology management, it remains to distinguish the respective roles and responsibilities of the principal organizational units of the Biological Services Program for each of the five steps of the transfer process. In addition to the new Regional Teams, which will implement information and technology transfer on a day-to-day basis within each Service Region, the existing National Teams and Groups and Headquarters will each adopt complementary, although partially overlapping, roles and responsibilities as outlined by the Information and Technology Transfer Committee.[1] Headquarters also will lead in the establishment of methods, standards and procedures, and training for each of the five steps of the transfer process.

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[1] Working Paper of the Information and Technology Transfer Commitee on the Roles and Responsibilities in the Biological Services Program, Biological Services Program, October 1977.

Identification of Information and Technology Needs

The Regional Teams will emphasize the identification of the information and technology needs of users within their respective Regions, dealing with areawide issues and problems or those that are localized within and are relatively unique to the particular Region. Although the ultimate intent is to be comprehensive, the budgeted subject area specializations of Regional Team members and the funded Biological Services Projects to which they are assigned, such as Coal, Oil Shale, or Western Water Allocation, will primarily determine the activities they recommend as they screen the needs of the Region. This constraint applies to projects to be undertaken within the limits of current budget resources. For purposes of future budget planning, however, the real priorities of regional needs should be identified.

The National Teams and Groups will emphasize the identification of needs concerning issues or problems having a national significance or applying to more than one Region. They also will concentrate on the subject area specializations for which they are staffed and funded, such as coastal ecosystems or power plants.

Headquarters will focus on identifying emerging national needs as well as the overall needs of interagency programs and programs of Federal agencies other than the Service. This approach will ensure that proper attention is given to external user groups, in keeping with the proposed role of the Service as the "ecological arm" of the Federal Government. Headquarters also will be responsible for establishing criteria for setting national and regional priorities of needs by user group, subject matter, and Biological Services Project.

Communication of Information and Technology Needs

The Regional Teams will be responsible for communicating the identified information and technology needs of each Region to appropriate Service and other suppliers within the Region and to the National Teams and Groups for review and forwarding to Headquarters. Appropriate suppliers will include the National Teams and Groups, Research Centers, and suppliers external to the Service that are staffed and funded to respond effectively. The communication of needs will be coordinated with the Service budget and advance planning cycles.

The National Teams and Groups will review the needs forwarded by the Regional Teams as well as those that they identify themselves; they will communicate these needs to Headquarters with recommendations for appropriate action. The timing of these communications will coincide with the requirements of the Annual Work Plan process and the strategic planning cycle.

Headquarters will establish uniform procedures for reporting and pooling information on user identification, user needs, and associated supplier capabilities; these procedures will be consistent with the requirements of the annual budget and advance planning cycles, including the Annual Work Plan process. Headquarters will additionally channel certain information and technology requirements involving desirable innovation, national trends, and interagency programs to other Service Programs or to external suppliers.

Development of Information and Technology

The Regional Teams will emphasize providing quick-response information search, advice and consultation, repackaging of products for regional users, and other technical assistance to regional users. They also will manage Biological Services studies that are localized or are areawide and specific to the Region and for which they possess the subject area expertise; supply access to regional information bases; and develop regional information bases that complement or are components of those developed by the National Teams and Groups.

The National Teams and Groups will participate in the design and technical review of all Biological Services-funded studies to be managed by the Regional Teams as well as their own national studies to ensure quality control over products; they also will directly manage studies of national or multiregional scope, particularly within their assigned areas of subject matter expertise, and studies involving advanced methodology or requiring specific scientific and technical skills. In addition, the National Teams and Groups will design and develop comprehensive information systems having national, regional, or multiregional coverage, including the requirements for systems developed by Regional Teams; conduct applied research on the state of the art of ecological assessment; supply access to national information bases; provide major information search and synthesis; and repackage products for national use.

Headquarters will guide the development of regional and national studies and information systems. In some cases, it may conduct pilot efforts to develop information and technology. However, this situation would occur by exception only. Headquarters also will coordinate access to and utilization of external data and other information resources and development capabilities. This responsibility will include the execution of agreements with other Service Programs and other Federal agencies for cooperative development of information and technology.

Dissemination of Information and Technology

The Regional Teams will disseminate both Regional Team and National Team and Group products to regional users, emphasizing dissemination techniques involving interpersonal contact and utilizing exhibits, illustrated briefings, workshops, and computerized systems. The Regional Teams also will train the regional users in the effective application of information and technology and will develop dissemination plans for Regional Team products as well as regional components of dissemination plans for National Team products.

The National Teams and Groups will disseminate products on a national or multiregional basis, emphasizing print, audiovisual, and electronic media and major conferences. National Teams and Groups will provide training for appropriate user groups and for the Regional Teams in the effective application of information and technology. They also will develop national dissemination plans for each set of Biological Services products and each Service Region in cooperation with the Regional Teams.

Headquarters will provide guidance for the development of national and regional dissemination plans and will ensure that Program Advices and Work Plans stipulate adequate monetary and personnel resources for effective implementation of the dissemination plans. Headquarters may also centrally dispense Biological Services products requiring national distribution and will provide training for the Regional Teams and the National Teams and Groups in transfer techniques and the implementation of dissemination plans.

Evaluation of Information and Technology

Within criteria to be established by Headquarters, the Regional Teams will be responsible for evaluating the relevance of products and services to regional users and their needs. They will recommend to Headquarters certain improvements in the output of Biological Services suppliers so as to better satisfy needs identified in the Regions.

Following the criteria established by Headquarters, the National Teams and Groups will conduct evaluations of products and services with respect to national or multiregional needs and to achieving the technical quality specified in the original study design; they will recommend necessary improvements in products and services to Headquarters.

In consultation with the Regions and the National Teams and Groups, Headquarters will establish both quantitative and qualitative evaluation criteria to be used by the Teams and Groups in assessing the usefulness of products and services. Headquarters will consider the evaluations and recommendations of the Regional Teams and the National Teams and Groups in taking measures necessary to improve products and services. Headquarters also will make independent evaluations for management purposes, emphasizing the fulfillment of the Biological Services mission, the goals and objectives of Service Programs, sensitivity to national trends and emerging national needs, and opportunities for desirable innovation. Finally, Headquarters will periodically report the outcome of evaluations to the Program Manager for Habitat Preservation for appropriate action through Program Advices and Budget Initiatives.

IMPLEMENTATION PLANS

This section provides a brief summary of adopted plans for implementing the expanded national and regional capability for ecological information and technology management in FY 1978. The Office of Biological Services has been designated to coordinate the development and implementation of the management strategies by working with the regional staffs to prepare detailed working procedures and conduct the appropriate training. A description of the procedures development and training activities is given below, followed by highlights of the FY 1978 Program Advice Amendment for the Biological Services Program.

PROCEDURES DEVELOPMENT AND TRAINING

The procedures will be developed in a series of 13 workshops by representatives from the Regions, National Teams and Groups, and Headquarters, who will be supported under contract by experts in information and technology management. The format for the workshops is outlined below.

The workshop chairpersons will approve a procedures outline developed by the support staff. The staff will then prepare draft procedures on the topics to be considered at each workshop and develop a 2- to 3-hour simulation exercise so that the participants can draw on their own experience in making judgments about the draft procedures. This technique will not only focus the varied experience of the participants on the draft material, but also provide an indicator of the appropriateness of the proposed procedure to the actual work situation.

Procedures developed in this manner will be approved as "temporary" and tested as they become available in FY 1978 through FY 1979. They will be finalized in FY 1979, but will be published in a looseleaf format so they can be reviewed periodically and updated.

The procedures are to be coordinated with existing Department of the Interior and U.S. Fish and Wildlife Service manuals.

AMENDED PROGRAM ADVICE FOR FY 1978

The Biological Services Program Advice will be amended to further the implementation of the information and technology management policy prescribed in these guidelines. The following summarizes the National Objectives of the amendment.

Continue to develop and use a systematic, cohesive national and regional Biological Services information and technology management capability in accordance with the new policy, as further defined by the amended Advice and eventually by management procedures to be developed in FY 1978.

Establish a Regional Biological Services Team in each Region and Alaska. The Teams will cover all Regional Biological Services functions and include a Regional Team Leader (RTL) and a Regional Information Transfer Specialist (RITS). The RTL will supervise the Team and will report to the ARDE. Any exceptions to this arrangement must be specifically approved by the Program Manager and amended in the Regional section of the Program Advice.

Regional Teams must carry out functions as described in the policy document, as further defined in forthcoming procedures to be developed during FY 1978. The RTL and RITS must personally participate in and contribute to all information and technology management procedures development and training workshops to be scheduled, supported and coordinated by the Office of Biological Services.

Each Regional Team must develop and implement an Annual Work Plan for Information and Technology Management. Standards and procedures for these plans will be developed jointly by Regional Team Leaders and appropriate OBS staff. Plans must include provision for addressing the needs of the Habitat Preservation Category Programs, habitat aspects of other Service Programs and, in accordance with the Director's policy, other Federal, State and private agencies concerned with development and management of natural resources. The plan will provide for quarterly reporting of information assistance provided to these outside agencies. The FY 1978 Annual Work Plan should be prepared by February 1, 1978.

PART II

POLICY BACKGROUND

The new policy fits into a larger framework of Program policy and strategies already established within the Habitat Preservation Programs. The current status of the Biological Services Program and the proposal to further develop this organization into a Federal Ecological Survey and Analysis Program complete the background of concepts and philosophy surrounding the new policy.

RELATED PROGRAM POLICY

The pivotal goal and allied objective of the Habitat Preservation Programs[2] that pertain to a policy on information and technology management are:

- Goal 1. Enhance and maintain Service capability in its role as the primary Federal source for developing and providing ecological information and techniques for assessing development of significance to fish and wildlife resources.
- Objective 6. Develop an effective information transfer mechanism to make information readily available throughout the Habitat Preservation Programs, to other Service Programs, and to a variety of Federal and other users, including provision of highly responsive and appropriate technical advice and consultation.

A distinct Program policy stems from this fundamental goal and allied objective. To enhance and maintain capability as the primary Federal source of ecological information relating to fish and wildlife resources and their habitats, it is Service policy to develop strategies for national and regional inventory and evaluation, improved environmental planning and impact assessment using new techniques and methodology, and effective information transfer systems developed and maintained to receive, store, and disseminate information and technology to users. This is to be done in cooperation or consultation with other Federal and State agencies having resource management responsibilities. Furthermore, it is Service policy to maintain an objective, scientific data base as a tool for assessing development of significance to fish and wildlife resources and related ecological values and to make this information available to Federal and State agencies and other users in such a manner that it can be used effectively in their planning and decisionmaking.

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[2] Habitat Preservation Program Management Document.

RELATED PROGRAM STRATEGIES

Various strategies are used to attain the goal, objective, and policy described. Three adopted program strategies are especially germane to ecological information and technology management.

Fish and Wildlife Information Base

A key strategy is to develop an information base to record the extent, distribution, and ecological characteristics of fish, wildlife, and ecosystem resources on an areal or regional basis. Such information is needed to assess regional or large-scale impacts and trends, as well as to provide a context within which the significance of individual site-specific actions can be evaluated. In particular, there are four directives associated with this strategy:

- Because of the critical importance of wetlands to fish, wildlife, and other ecological resources, give high priority to completing a National Wetland Inventory by 1980 and maintaining this information in current status thereafter.
- Develop information on ecosystems and regions expected to be heavily stressed by development over the next 5 years, such as coal extraction and conversion; stream alterations, western water allocation, and other modifications of riverine ecosystems; Outer Continental Shelf development and other coastal alterations; and geothermal, oil shale, and other selected land and water resource development.
- To lay the groundwork for a longer range habitat information system nationwide, develop compatible systems for inventorying and classifying all fish and wildlife habitat types and for

storing, retrieving, and displaying the information; and test these systems initially in Alaska and extend them to other locations as resources permit.

- To ensure greatest utility and compatibility, cooperate with other agencies in the development and utilization of this information base, such as working with the Forest Service in the inventories required under the Forest and Range Resources Planning Act; and involve the States as participants when practicable, both as a source and user of much of the required information.

Analytical Techniques and Methodology

Another strategy central to information and technology management is to develop and apply analytical techniques and methodology to improve evaluative and predictive capability in environmental planning and impact analysis. Several examples are techniques for determining instream flow requirements in western streams; environmental impacts of extracting coal, oil shale, and minerals and of other terrestrial disturbances; impacts of coastal alterations, such as onshore, estuarine, and marine impacts of Outer Continental Shelf development; impacts of stream alterations, power plants, contaminants and other disturbances to aquatic ecosystems.

In addition, it is important to develop, test, and apply information, methodologies, and strategies for minimizing or mitigating the ecological impacts of development so as to increase capability to identify environmentally acceptable options or remedial measures. A few examples are:

- Methods for siting utility corridors and for management of transmission line rights-of-way to protect fish and wildlife resources.
- Institutional and legal strategies for reserving flows in western streams for fish and wildlife.
- Reclamation techniques and strategies for use in coal and oil shale development.

Information and Technology Management

All of these preceding directives are subsumed under a Program mandate to develop effective transfer mechanisms to make information, including technical advice and consultation, readily available to Habitat Preservation and other Service Programs and to a variety of Federal and other users. A key element to achieving more effective resource management, including development and regulation, is a mechanism to ensure that the best existing information can be made available to decisionmakers in the proper format at the appropriate time.

Information and technology transfer is a well-recognized weakness in most technically based Federal programs. There is a wide gap between the supplier and the user of information and technology. Efforts being made to close this gap include the development and coordination of a comprehensive information transfer network of users and suppliers. A strategy is being devised to provide a systematic approach to:

- Identify users' needs and priorities by analyzing fish and wildlife resource planning and decisionmaking processes.
- Communicate users' needs and priorities to appropriate suppliers in the form of an Information and Technology Management Plan.
- Develop information and technology in response to communicated users' needs and priorities.
- Disseminate information and technology to selected users in the proper format at the appropriate time.
- Evaluate use and effectiveness of information and technology as well as the transfer process.

The proposed network of users and suppliers, to be implemented in FY 1978, will include the Regions, National Teams and Groups, Headquarters, and selected Research Centers. The five-part process outlined above will derive directly from the policy statement on information and technology management contained in the guidelines set forth in Part I.

It is essential to recognize that the process for managing ecological information and technology transfer necessarily involves the full range of Biological Services functions. In effect, the five-part process outlines the entire operational structure of the Program. Therefore, the process cannot be considered a separate compartment of operations as are other Projects or activities of the Program.

BIOLOGICAL SERVICES PROGRAM

In 1974, the Biological Services Program was initiated as a major new thrust of the Service. It was launched to provide an improved ecological information base well in advance of development actions, thus ensuring that fish and wildlife and related ecosystem values would receive adequate consideration in decisionmaking. Information generated by the Biological Services Program meets three important needs:

- Supporting more effective fulfillment of Service responsibilities for environmental impact assessment and habitat protection.
- Supporting more effective consideration of environmental values in Department of the Interior decisionmaking.
- Providing for better consideration of ecological impact and fish and wildlife relationships by other Federal agencies, States, and the private sector.

With its emphasis on applied ecological research, information synthesis and analysis, and information and technology transfer, the Biological Services Program is an important step toward providing an ecological capability specifically tailored to address the kinds of needs referenced here. A highly expert interdisciplinary core staff has been assembled to design and manage ecological studies and analyses. Biological Services efforts are now generating a wide range of baseline data, analyses, models, reports, and other products. Much of the information is already being requested and used by Federal and State agencies. Further, a strong ecological information system, simulation modeling, and systems analysis capability has been developed to enable the Service to synthesize and apply ecological data to a variety of resource planning and management problems.

FEDERAL ECOLOGICAL SURVEY

Recently, the Assistant Secretary for Fish and Wildlife and Parks proposed to the Secretary of the Interior that the present thrust of the Biological Services Program be extended to provide an Ecological Survey and Analysis Program. The goal of this Program would be to provide a government-wide scientific center for information and analysis of ecological aspects of resource development and environmental stress. Should this proposal be adopted in relation to the upcoming reorganization of Federal natural resource activities, it would have great impact on the goal, objectives, policy, and strategies outlined herein.

Proposed Ecological Information Base

The Assistant Secretary's proposal[3] calls for a comprehensive information base on important ecosystems and regions subject to development stress and for information systems, technology transfer, and technical assistance capability to ensure that the information developed can be utilized by resource planners and managers. Under this arrangement, the resource management agencies would focus on improved definition of ecological information needs and on identifying how the information would be used in planning, impact assessment, and management.

The proposed information base would bring together fragmentary sources of information and provide a cumulative Federal-State ecological data base that could serve multiple needs. For example, the same information could be used in making decisions regarding Outer Continental Shelf development, Coastal Zone Management, superport development, dredge and fill permits, and other coastal programs. Information would be accumulated in advance of specific development actions and thus would minimize delays resulting from inadequate lead time for data collection.

Although additional resources should be provided initially to help establish a central ecological survey and analysis capability and to fill important information gaps, ultimately the costs of obtaining needed information and technology would be lower because redundant and misdirected efforts would be reduced. For example, improved study design could minimize the costly "measure everything" approach.

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[3] Memorandum to the Secretary of the Interior from the Assistant Secretary for Fish and Wildlife and Parks, dated July 27, 1977.

Need for Ecological Information

The general need for improved ecological information is underscored by the Service Directorate in the Executive Direction of the Program Management Document.[4] In the 10-year planning outlook, it is observed that the Service often finds itself near the end of a long chain of events that started with actions totally beyond the influence of the agency. This means that the Service, in many of its activities, reacts after the fact rather than anticipating change and development. An increasingly rapid rate of social and technological change, however, warrants increased efforts to get involved in development activities during their planning stage, when the opportunities are greater for directing events to a more desirable outcome.

Directly related to this problem is the requirement for better information on fish and wildlife and ecological relationships to support the National Environmental Policy Act or other Federal and State environmental legislation. There has been and will continue to be a tremendous need for this information by planning, development, and licensing agencies. These agencies, lacking adequate information to effectively assess ecological considerations in their decisionmaking process, are seeking ways to obtain it, often resulting in duplicative, inefficient, or wasteful study efforts.

In addition, the December 1974 joint report of the Council on Environmental Quality and the Federal Council for Science and Technology, entitled "The Role of Ecology in the Federal Government," observed that:

> Ecological research activities are scattered throughout many agencies of the Federal Government with little overall coordination, direction, or definition of priorities. Large volumes of survey, monitoring, and research information of ecological

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[4] Fish and Wildlife Service Executive Direction, Program Management Document, revised draft dated June 1977.

> value are gathered by Federal agencies, but with limited or specialized use, generally primarily by the collecting agency. These data, together with non-Federal information, constitute resources of enormous value if selected, focused, analyzed, and integrated for applicability to specific environmental problems, to strengthening the ecological basis for regulatory actions in land, water, air, and resource management and to mitigation of environmental impacts.

Although there are well-established centers for information on environmental features such as soils (Soil Conservation Service), hydrology and geology (Geological Survey), meteorology (National Oceanic and Atmospheric Administration), and others, a major vacuum exists within the Federal government concerning a central repository for ecology and ecosystem information. It is to fill this vacuum that the Assistant Secretary has proposed to expand the present Biological Services Program of the Service as a centralized Ecological Survey and Analysis Program serving all governmental needs.

APPENDIX

- *Report of the Task Force on Regional Information and Technology Transfer*, Biological Services Program, May 1977.

- *Working Paper of the Information and Technology Transfer Committee on the Roles and Responsibilities in the Biological Services Program*, Biological Services Program, October 1977.

Biological Services Program

May 1977

REPORT OF THE TASK FORCE
ON
REGIONAL INFORMATION
AND TECHNOLOGY TRANSFER

Fish and Wildlife Service

U.S. Department of the Interior

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May 1977

REPORT OF THE TASK FORCE ON REGIONAL INFORMATION AND TECHNOLOGY TRANSFER

Fish and Wildlife Service
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REPORT OF THE TASK FORCE
ON REGIONAL INFORMATION AND TECHNOLOGY TRANSFER

I. OBJECTIVES OF THIS PROPOSAL

The Task Force on Regional Information and Technology Transfer has established three allied objectives that serve as the basis for a proposed approach to instituting an effective regional information and technology transfer capability:

- To organize systematic communications with a network of primary users and suppliers of information and technology for fish and wildlife resource planning and impact assessments within each Fish and Wildlife Service (hereinafter referred to as the Service) Region.
- To participate in establishing priorities of needs for information and technology.
- To channel the users' information and technology requirements to the appropriate suppliers, transfer the suppliers' response to the intended users, and communicate users' reaction to and use of information and technology provided back to suppliers.

The Task Force proposes the establishment of Regional Information and Technology Transfer Teams (hereinafter referred to as Regional Teams) as the organizational mechanism by which these objectives are to be accomplished in the Regions. It is understood that additional mechanisms and resources for accomplishing these objectives will be required within the National Teams, Headquarters, and other components of the Service. However, this discussion focuses on the Regional Teams and their responsibilities. Further definition will be needed to specify the roles and responsibilities of the National

Teams, the Headquarters units, and the Divisions of Research, and to specify their relationships with the Regional Teams.

II. STATEMENT OF NEED

A. Need To Link Information and Technology Suppliers and Information and Technology Users

Although the Service's suppliers of information and technology are concentrated in various programs and projects, National Teams and Groups, and Research Centers and Laboratories, the intended users are diverse and dissociated. The various users are separately organized for their own purposes; they are not collectively organized to integrate their information and technology requirements. Their combined requirements, frequently overlapping, must be identified, sorted, and given overall priorities. The Regional Teams will act as brokers between information suppliers and users.

B. Need To Link the Review Mode and the Planning Mode

Regional operations of the Service must be balanced between action and reaction; reaction to project proposals and license or permit applications must be balanced with action to undertake advance planning for major resource development projects and large natural areas. When operating in the reactive or review mode, it is sometimes too late at the time of license or permit application and agency review of the planning organization report to adapt project design or secure preventive or remedial measures to minimize adverse effects of project construction and operation. A long-range, areawide approach using quantitative criteria is required to augment and provide perspective to site-specific analysis. The Regional Teams will work with information and technology suppliers to obtain broad-gauged, cumulative planning and evaluation technologies.

III. BACKGROUND

Access to information and technology and their adaptation to the exact needs of resource planners and decisionmakers are the keys to responsible biological planning and problem solving. Ensuring such access requires the capability to transmit synthesized information and technology, together with techniques for their effective utilization, within the Service and to a wide variety of other Federal, State, intergovernmental, and private users. The actual application of relevant information and technology to the solution of problems relating to the preservation and enhancement of the Nation's fish and wildlife resources is therefore the primary benefit to be derived from the proposed effort.

Many persons in the Service have urged greater efforts to synthesize data and research findings into products that focus more on the priority information and technology needs of the Service. Information and technology transfer should occur as a tailored response to needs; aspects of information such as format and specificity should be prescribed. Furthermore, special efforts to ensure the actual utilization of information and technology have been advocated.

A coherent information and technology transfer strategy should provide an approach to:

- Better definition of primary users and their information and technology requirements.

- Improved adaptation of information and technology to user's priorities.
- Packaging of products and dissemination of information and technology to meet users' needs.
- Monitoring the utilization of information and technology, including obtaining feedback on user satisfaction.

The formal basis for this proposal is derived from four management documents.

A. Program Management Document for the Habitat Preservation Category (Fish and Wildlife Service 1976a)

The first goal of the Habitat Preservation Program is to enhance and maintain the capability of the Service as the primary Federal source of ecological information and techniques for assessing developments of significance to fish and wildlife resources. Two targets assigned to the Biological Services Program are:

- To establish regional information transfer capability within the Service by 1978.
- To extend the information transfer network to selected State fish and game agencies on a cooperative basis by 1978.

B. FY77 Program Advice for the Biological Services Program (Fish and Wildlife Service 1976b)

One of the stated objectives of the Biological Services Program is:

- To ensure an awareness of ecological information needs and the availability and use of Biological Services Program information.

C. FY77 Annual Work Plan for the Information Transfer Project of the Biological Services Program (Fish and Wildlife Service 1976c)

The Work Plan contains the following explicit guidelines for creating a Regional Team for technology transfer and utilization:

- Management would be furnished by the Assistant Regional Director-Environment, and technical guidance would be provided by the staff of the Information Transfer Project.
- Subject matter and mission expertise would be supplied by the Regional Activity Leaders (RAL's), and the information science expertise would be provided by an Information Transfer Specialist (ITS).
- Six to nine months of pilot effort is expected to be required to develop a regional technology transfer plan and procedures.

According to the Work Plan, the functions of the Regional Team would be to: define and communicate the priority requirements of Federal and State agencies and the private sector for ecological information and technical assistance to the National Teams for response; to track the response; to guide the transfer of an information or technology response to the origin of need; to aid in the utilization of the response; and to obtain feedback on its effectiveness.

D. FY78 Budget Initiative (Fish and Wildlife Service 1976d)

The initiative calls for standardized procedures for evaluation and assessment of cumulative impacts and for acceleration of the National Wetland Inventory and Habitat Classification/Analysis efforts.

This new approach to environmental review--standardizing procedures, employing new technology, and examining areawide aggregated impacts--is exactly the priority effort required by information and technology users that is to be provided by the Regional Teams.

IV. TEAM CONCEPT

A. Functions

The central function of regional information and technology transfer is to create and sustain efficient linkage between an organized network of primary users and suppliers of information and technology.

There are five basic steps in the full cycle of regional information and technology transfer:

- Identify needs and priorities by analyzing regional fish and wildlife resource planning and decisionmaking processes.
- Communicate needs and priorities to appropriate suppliers. (The technique will vary depending on the scope and timing of the need.)
- Develop information and technology in response to user needs.
- Transfer information and technology to users.
- Evaluate use and effectiveness of information and technology and the transfer process.

B. Tasks

The specific tasks envisioned for each step in the overall procedure are as follows.

1. Identify needs and priorities

a. Identify regional information and technology requirements.

b. Determine overlapping needs.

c. Determine timing requirements.

d. Categorize information requirements by classes of technology output (survey and synthesis, applied research, and technical assistance).

e. Help prospective users analyze their needs.

f. Gauge capability of Service suppliers.

g. Survey Service information and technology suppliers for planned information output to show users what will be available.

2. Communicate needs and priorities

a. Develop a scheme for screening and matching needs and sources to meet requirements for information synthesis or technical assistance.

b. Screen and match user needs and supply sources.

c. Prescribe nature, priority, timing, and phasing of desired survey and synthesis and applied research.

d. Identify the supplier best suited to respond effectively to each information and technology requirement and communicate requirements in accordance with established procedures.

e. Define how the Regional Team will continuously assess users' requirements and the benefits of information and technology utilization.

3. Develop information and technology

Information and technology will be developed by many Service entities. The Regional Team will work with other suppliers to ensure that products are useful to the Region. To some extent, the Regional Teams will, themselves, be information suppliers. Activities may include the following.

a. Coordination with suppliers:

1) Develop the Regional Annual Work Plan for Information Transfer in coordination with Research Centers,

Laboratories, and Cooperative Units; National Teams, Groups, and Projects; and regional offices.

2) Monitor the activities of Service information and technology suppliers to ensure that information and technology generated will be applicable to identified needs.

b. Production of information and technology:

1) Survey and synthesize information.

2) Assemble and maintain comprehensive information bases.

3) Analyze and manipulate selected data bases for very specialized applications.

4) Provide technical assistance to users (to include advice and consultation, information search and processing, and conferences and short courses).

4. Transfer information and technology to users

a. Integrate, package, and repackage information.

b. Match media and format to user requirements.

c. "Market" technology products to potential users.

d. Train users in use and application of new technologies.

5. Evaluate use and effectiveness

a. Establish procedures for evaluation of the effectiveness of products, services, and the transfer system.

b. Document benefits resulting from information and technology transfer activities.

c. Assess gains in resource enhancement or losses prevented by impact mitigation that are attributable to the availability of Regional Team information and technology.

d. Advise on needed refinement and redirection of the activities of both the Regional Team and the other information and technology suppliers.

C. Organization

There are two components of the regional transfer organization:

- Regional Information and Technology Transfer Steering Group.
- Regional Information and Technology Transfer Team.

Figure 1 outlines the five steps of the basic information and technology transfer procedure and the primary and secondary assignments of transfer agents within the organizational components.

1. Steering Group

The Steering Group will set policy affecting regional information and technology transfer. The Steering Group will meet periodically to review Regional Team activities and performance; identify needs; set activity priorities; review operating procedure; and oversee administrative matters such as funding, staffing, training, and support contracting.

The Steering Group should include the Regional Director, the Assistant Regional Directors, the Public Affairs Officer, and the Area Managers. The Technology Transfer Manager (TTM), as described below, will be an ex officio member of the Steering Group, acting as liaison between that group and the Regional Team. Upon request, the National Teams and Groups and Research Centers, Laboratories, and Cooperative Units will also participate. The Steering Group therefore will represent all of the regional Service users as well as many Service suppliers.

2. Regional Team

The Regional Team will implement the five-step transfer procedure on a day-to-day basis within the Service Region.

	STEPS				
ORGANIZATION	Identify Needs and Priorities	Communicate Needs and Priorities	Develop Information/ Technology	Transfer Information/ Technology to Users	Evaluate Use and Effectiveness
*Regional Steering Group**					
Regional and Area Offices	●	0	0	0	●
Regional Team					
Technology Transfer Manager (TTM)	●	●	●**	●	●
Regional Activity Leaders (RAL's)	●	●	●**	●	0
Regional Coordinators (RC's)	●	●	●**	●	0
Information Transfer Specialists (ITS's)	0	0	●**	●	●

● - Primary Participation

0 - Secondary Participation

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* Regional Director, Assistant Regional Directors, Area Managers, Public Affairs Officer, TTM (ex officio). The following will participate as requested: Team and Group Leaders and Research Managers; National Team ITS's; representatives of Research Centers, Laboratories, and Cooperative Units.

**Regional Teams will respond to specialized requirements; National Teams, Research Divisions, and other Service suppliers will address comprehensive needs.

Figure 1. Outline of the regional information and technology transfer organization.

It is made up of a TTM, a Regional ITS, the RAL's, and appropriate Regional Coordinators. The Regional Team, located in the Regional Office in close communication with Area and Field Offices, will have to combine direct representation of primary users, indirect representation of suppliers, and performance as transfer agents or brokers to establish and maintain their linkages. To represent all Service programs in the Regions, the Regional Team should report directly to the Regional Director.

The Task Force recognizes the need for developing standardized procedures for many of the activities under the five basic steps. The Regional Team will participate in the development and establishment of these procedures with the appropriate Headquarters personnel.

The Regional Team will furnish the necessary technical leadership in information and technology transfer and in the subject areas of the projects under the Service program. The basic involvements of the Team members are defined in the following paragraphs.

a. Technology Transfer Manager (TTM). The TTM should be an advanced environmental strategist and technologist with considerable analytical training and experience in public administration and a technical background in resource management. The Regional TTM will analyze technology requirements and benefits, will function as the technical leader of the Regional Team, and will participate in a primary role throughout the transfer procedure. The TTM must work with all Regional Team members within their project categories to define and communicate information and technology requirements to the National Teams, Research Centers, and other suppliers. The TTM with the assistance of all Regional Team members will be primarily responsible for introducing needs for information synthesis, research, and technical assistance into the planning process through liaison with the Steering Group.

b. Regional Information Transfer Specialist (ITS). The Regional ITS should be trained in information science, with a background in environmental science, and will support the Regional Team by providing:

- The tools and techniques necessary for transfer of information and technology from a system of national suppliers to a network of regional users.
- The primary regional link in the Information Transfer Network of the Service, connecting the information search and data processing capabilities of the Network to both the Region and the associated States.

The Regional ITS will apply special skills in the uses of libraries, computer storage and retrieval, publications, workshops, and many other information repositories and communication media. The primary participation of the Regional ITS in Regional Team activities will involve preparing the Transfer Plan, guiding the delivery system, and monitoring technology utilization.

c. Regional Activity Leaders (RAL's). The presently assigned RAL's will comprise the majority of Regional Team members and will furnish the Team's principal effort. They will participate in identifying and communicating needs, establishing priorities, and assisting in the development and transfer of information and technology.

d. Regional Coordinators (RC's). The RC's will supplement the efforts of the RAL's in several specialized areas (i.e., National Wetland Inventory, Coal, Oil Shale, Phosphate, Habitat Evaluation, and others as appropriate).

V. RECOMMENDATIONS FOR IMPLEMENTATION

The Task Force on Regional Information and Technology Transfer makes the following primary recommendations for implementing the Regional Technology Transfer Plan.

A. The program proposed herein for Regional Teams should be simultaneously implemented for all programs in all Regions. Full implementation requires:

1. New position for TTM.

2. New position for ITS.
3. New ceilings as necessary for expanding the Regional Team's capabilities (under regional budget).
4. Additional funds for contract support.

B. The cost for the two new positions should be assessed at the Washington Office from all Service programs according to some equitable basis.

C. Ceilings should be provided by the Program Managers in the Washington Office.

D. The Biological Services Program objective to extend the Information Transfer Network to selected State fish and game agencies should be deferred until regional information and technology transfer capabilities have been established in all Regions and adequately evaluated.

The Task Force, however, recognizes the limitations in funds and ceilings and suggests alternatives that may increase the feasibility of initiating the Plan. The following alternatives are given in descending order of priority.

A. Simultaneously implement the Plan in all Regions with the addition of only one ceiling per Region. This may necessitate some reallocation of personnel time in the Region to the possible detriment of ongoing programs. Each Regional Office should decide whether the position will be the TTM or the ITS. To facilitate implementation of the Plan, limit services to selected programs, specifically Habitat Preservation. Other programs should be included as Regional Teams become operational.

B. Implement the Plan fully in selected Regions to be determined cooperatively by the Washington and Regional Directorate.

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Biological Services Program

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WORKING PAPER OF THE INFORMATION AND TECHNOLOGY TRANSFER COMMITTEE ON THE ROLES AND RESPONSIBILITIES IN THE BIOLOGICAL SERVICES PROGRAM

Fish and Wildlife Service

U.S. Department of the Interior

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OCTOBER 1977

WORKING PAPER OF THE INFORMATION AND TECHNOLOGY TRANSFER COMMITTEE ON THE ROLES AND RESPONSIBILITIES IN THE BIOLOGICAL SERVICES PROGRAM

Biological Services Program
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[3] Represented by Deborah Eaton at the second meeting.

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INTRODUCTION

The purpose of the Working Paper of the Information and Technology Transfer Committee is to provide recommendations regarding the roles and responsibilities of the organizational units of the Biological Services Program (BSP). Five important steps of information and technology transfer are addressed, but these steps do not necessarily cover all of the functions of the BSP. Emphasis is placed on a communications system linking all users and suppliers of information and technology, the effective development and transfer of ecological information and technology, and the evaluation and improvement of products and services. A matrix, included as Appendix A, illustrates the text.

It should be noted that the use of this paper presupposes a knowledge of a precursory document, the Report of the Task Force on Regional Information and Technology Transfer, as modified by a memorandum dated July 19, 1977, from the Associate Director - Environment and Research to the Regional Directors and others on the subject of implementing regional information and technology transfer. This memorandum is included as Appendix B.

The Working Paper of the Information and Technology Transfer Committee, as considered by the Associate Director - Environment and Research in light of the recommendations of the Chief, Office of Biological Services, will contribute substantially to the preparation of a policy statement on information and technology transfer. In turn, the policy statement will lead to the preparation of a manual of detailed standards and procedures to implement the policy and remove any ambiguity contained in the generalized recommentations of this paper. The Report of the Task Force on Regional Information and Technology Transfer, as considered by the Associate Director - Environment and Research in view of the recommendations of the Regional Directors, will also be influential in the preparation of the policy and procedures.

IDENTIFICATION OF INFORMATION AND TECHNOLOGY NEEDS
(STEP ONE)

ROLES AND RESPONSIBILITIES OF REGIONAL TEAMS

The Regional Teams will have primary responsibility for identifying the information and technology needs of regional users, with an emphasis on problems of a site-specific nature that are localized within a Region. They will fulfill this responsibility by identifying all regional users--the U.S. Fish and Wildlife Service (FWS) and other Federal, State, and private agencies and organizations; defining user needs in terms of what products and services are needed and when; screening regional needs and their priorities; and participating in the process of setting BSP regional priorities, including ranking BSP Project priorities within their respective Regions.

ROLES AND RESPONSIBILITIES OF NATIONAL TEAMS AND GROUPS

The National Teams and Groups will work with the Regional Teams to identify potential users within the FWS, other Federal agencies, the States, and the private sector. This identification process must be coordinated with that of the Regional Teams to prevent redundancy or inconsistency. Emphasis will be placed on users whose needs are concerned with problems having a national significance or applying to more than one Region. The National Teams and Groups will participate with Regional Teams, and with Headquarters as necessary, in defining user needs and in screening user priorities. National Teams and Groups will also participate in setting BSP national and regional priorities, including ranking BSP Project priorities on a national basis.

ROLES AND RESPONSIBILITIES OF HEADQUARTERS

Headquarters will emphasize the identification of emerging national needs, the overall needs of interagency programs, and program needs of

Federal agencies other than the FWS. In addition, Headquarters, working with the Regional Teams and National Teams and Groups, will be responsible for establishing criteria for setting BSP national and regional priorities of needs by user group, subject matter, and BSP Project. These criteria must accommodate consideration of both the resource subject to impact and the potential effectiveness of the FWS response. In accordance with these criteria, Headquarters will coordinate the setting of BSP national and regional priorities.

When the needs of interagency programs are considered, guidance as to their relative priorities as compared to priorities of FWS program needs will come from the Habitat Preservation Program Manager through Headquarters. Some interagency program requirements may outweigh certain internal priorities if associated resource impacts are potentially more damaging or if interagency transfer funds are involved, provided that congressional mandates are met first. Clear guidance will be required from the Program Manager and Headquarters for balancing internal and external user priorities consistent with the proposed new role of the FWS as the "ecological arm" of the Federal Government.

COMMUNICATION OF INFORMATION AND TECHNOLOGY NEEDS
(STEP TWO)

ROLES AND RESPONSIBILITIES OF REGIONAL TEAMS

Communication of regional needs will involve Regional Team participation in developing uniform communication procedures applying to all Regions; providing a timely response to needs communicated by regional users; and matching the needs of regional users with regional or BSP national suppliers, whichever is appropriate to achieve the optimum response to a specified requirement. The Regional Teams will identify available suppliers and their capabilities within their respective Regions, including sources of regional information bases, and coordinate this activity with National Team and Group suppliers.

The Regional Teams will be responsible for communicating the information and technology needs of each Region to appropriate regional suppliers and to National Teams and Groups for review. Needs will be communicated to FWS suppliers within the Region, including the Research Centers and Laboratories, or to external regional suppliers, provided they are properly staffed and funded to respond effectively. Timing of the communication of needs will be coordinated with the annual planning cycle.

ROLES AND RESPONSIBILITIES OF NATIONAL TEAMS AND GROUPS

The National Teams and Groups will be responsible for participating in the development of uniform communication procedures; communicating user needs that they identify, together with all needs communicated to them by the Regional Teams, to Headquarters; matching the needs of users to national suppliers either external or internal to the FWS, including the National Teams and Groups themselves or the Research Centers and Laboratories, whichever is appropriate to achieve the optimum response to a specified requirement; and reviewing all needs and associated suppliers identified by the Regional Teams and Headquarters. The National Teams and Groups will identify sources of national or multiregional information bases as well as contractual suppliers of information and technology and their capabilities. This function requires coordination with the Regional Teams.

After mutual review and analysis of regional and national needs, and the available suppliers matched to those needs, the National Teams and Groups will forward specific recommendations to Headquarters for appropriate action. The timing of these communications will concide with the requirements of the Annual Work Plan process.

ROLES AND RESPONSIBILITIES OF HEADQUARTERS

Headquarters will coordinate the development of uniform procedures for reporting and pooling information on user identification, user needs, and related supplier capabilities; those procedures will be consistent with the requirements of the planning cycle, including the Annual Work Plan process. Headquarters will also communicate its identification of major user groups and needs of program areas to National Teams and Groups for review. BSP Project priorities also must be screened by Headquarters, and timely guidance must be given to the Regional Teams and National Teams and Groups regarding a future course of action. Headquarters will additionally channel certain information and technology requirements to other FWS programs or external suppliers for their response.

DEVELOPMENT OF INFORMATION AND TECHNOLOGY
(STEP THREE)

ROLES AND RESPONSIBILITIES OF REGIONAL TEAMS

The Regional Teams will play an important role in guiding and contributing to the development of information and technology. Their responsibilities will include responding directly to localized information and technology needs within their respective Regions; supplying access to regional information bases; developing regional information bases that complement or are components of those developed by the National Teams and Groups; and influencing the information development activities of the FWS, other Federal agencies, and State agencies within their respective Regions.

The Regional Teams will emphasize providing quick-response information search, advice and consultation, and other technical assistance to regional users. They also will participate in the design of regional and national studies; manage studies of a site-specific nature that are localized within the Region and for which they possess the subject area expertise, including certain studies designed by National Teams and Groups; and review, modify, and repackage suppliers' products for regional users.

ROLES AND RESPONSIBILITIES OF NATIONAL TEAMS AND GROUPS

The National Teams and Groups will emphasize the design and technical review of studies to be managed by Regional Teams as well as their own national studies to ensure quality control over study products. They will directly manage studies of national or multiregional scope, particularly within their assigned areas of subject matter expertise. They will also emphasize the design and development of comprehensive information bases having national, multiregional, and, in special cases, regional coverage.

National Teams and Groups will give technical assistance to the Regional Teams, Headquarters, and others as appropriate, and they will participate in the planning and design of information development programs both within and outside the FWS. Supplying access to national information bases; providing major information search and synthesis; and reviewing, modifying, and repackaging suppliers' products for national use will be additional functions.

ROLES AND RESPONSIBILITIES OF HEADQUARTERS

Headquarters will provide coordination and guidance in the development of regional and national studies and information bases by advising the Habitat Preservation Program Manager on the allocation of monetary and personnel resources among identified regional and national needs for information and technology. Headquarters will also coordinate the identification of, access to, and utilization of external data and other information resources and development capabilities. Another important function will be the execution of agreements with other FWS programs and other Federal agencies for cooperative development of information and technology. Policy and management review of products and services will be supplied when appropriate. Requests received for information and technology development will be forwarded to Regional Teams and National Teams and Groups as appropriate.

DISSEMINATION OF INFORMATION AND TECHNOLOGY
(STEP FOUR)

ROLES AND RESPONSIBILITIES OF REGIONAL TEAMS

The Regional Teams will be responsible for disseminating Regional Team and National Team and Group products to regional users, emphasizing dissemination techniques involving interpersonal contact and utilizing exhibits; illustrated briefings; workshops; and other established information systems, including computerized as well as nonelectronic. Regional Teams will advise other regional FWS suppliers in dissemination techniques appropriate for regional users and train regional users in the effective application of information and technology, including new findings and new approaches to resource management.

The Regional Teams also will develop dissemination plans for Regional Team products and will assist National Teams and Groups in developing regional components of dissemination plans for National Team and Group products. In addition, Regional Teams will be responsible for keeping their associated user groups aware of ongoing transfer activities and available products and will coordinate with National Teams and Groups to prevent redundancy or inconsistency.

ROLES AND RESPONSIBILITIES OF NATIONAL TEAMS AND GROUPS

With the assistance of the Regional Teams, National Teams and Groups will make a national or multiregional dissemination of products, emphasizing print, audiovisual, and electronic media and major conferences. National Teams and Groups will be responsible for preparing the national plans for disseminating BSP products. Dissemination plans will be developed for each set of BSP products and each FWS Region in cooperation with the appropriate Regional Teams. To ensure reaching target audiences, these dissemination plans will provide for current awareness materials, such as technical announcements and selected bibliographies on a systematic basis.

National Teams and Groups will be responsible for keeping their user groups aware of ongoing transfer activities and product availability and for coordinating with Regional Teams to prevent redundancy or inconsistency. In addition, National Teams and Groups will provide training for their associated user groups and for the Regional Teams, as appropriate, in the effective application of information and technology, including new findings and new approaches to resource management. As required, the National Teams and Groups will themselves receive such training from Headquarters.

ROLES AND RESPONSIBILITIES OF HEADQUARTERS

Headquarters will provide guidance for the development of national and regional dissemination plans and will ensure that Program Advices and Work Plans stipulate adequate monetary and personnel resources for effective implementation of the dissemination plans. Headquarters will develop and maintain a core mailing list for product distribution that Regional Teams and National Teams and Groups also will use and help to update. BSP products requiring national distribution may be dispensed centrally by Headquarters, emphasizing efforts such as technical bulletins, presentations at major national conferences, and review in the annual report. In addition, Headquarters will provide training for its own staff as well as for Regional Teams and National Teams and Groups, as required, in the use of information and technology transfer techniques and in the implementation of dissemination plans.

EVALUATION OF INFORMATION AND TECHNOLOGY
(STEP FIVE)

ROLES AND RESPONSIBILITIES OF REGIONAL TEAMS

The Regional Teams will be responsible for evaluating the relevance of the products and services of BSP Projects to regional users and their needs. The Regional Teams will participate with National Teams and Groups and Headquarters in developing BSP evaluation criteria, emphasizing relevance to user needs, fulfillment of the BSP mission, technical quality and format, and timeliness. Regional Teams will apply the criteria to evaluate the usefulness of BSP products and services within their respective Region and recommend to Headquarters certain improvements in the output of BSP suppliers so as to better satisfy needs identified in the Regions.

ROLES AND RESPONSIBILITIES OF NATIONAL TEAMS AND GROUPS

The National Teams and Groups will participate with Headquarters and the Regional Teams in developing evaluation criteria for BSP products and services. They will conduct evaluations of products and services with respect to national or multiregional needs and achieving the technical quality specified in the original study design. The National Teams and Groups also will participate with the Regional Teams in recommending the improvement of products and services to Headquarters.

ROLES AND RESPONSIBILITIES OF HEADQUARTERS

Headquarters, with the participation of the Regional Teams and the National Teams and Groups, will establish both quantitative and qualitative evaluation criteria to guide the assessment of the usefulness of BSP products and services by the Regional Teams and National Teams and Groups. Headquarters will consider the evaluations and recommendations of the Regional Teams and the National Teams and Groups and will recommend to the Habitat Preservation Program Manager the measures necessary to improve BSP products and services by appropriate action through Program Advices and Budget Initiatives. Headquarters will guide the overall evaluation of progress toward reaching BSP Project and FWS Program goals and objectives on a national basis, including consideration of national trends and emerging national needs.

APPENDIX A

MATRIX OF RECOMMENDED INFORMATION AND TECHNOLOGY TRANSFER ROLES AND RESPONSIBILITIES IN THE BIOLOGICAL SERVICES PROGRAM

STEP ONE: IDENTIFICATION OF INFORMATION AND TECHNOLOGY NEEDS

REGIONAL TEAMS	NATIONAL TEAMS AND GROUPS	HEADQUARTERS
• Identify regional users/user needs related to site-specific, localized problems.	• Identify users/user needs related to national or multiregional problems.	• Identify emerging national needs, interagency/external needs.
• Screen priorities of regional user needs.	• Screen priorities of national user needs.	• Establish criteria for setting BSP priorities.
• Participate in setting BSP regional priorities.	• Participate in setting BSP national and regional priorities.	• Coordinate setting of BSP national and regional priorities.
		• Guide balance of internal/external program priorities.

STEP TWO: COMMUNICATION OF INFORMATION AND TECHNOLOGY NEEDS

REGIONAL TEAMS	NATIONAL TEAMS AND GROUPS	HEADQUARTERS
• Participate in developing uniform communication procedures.	• Participate in developing uniform communication procedures.	• Coordinate development of uniform communication procedures.
• Identify internal/external regional suppliers and their capabilities.	• Identify internal/external national suppliers and their capabilities, particularly contractual suppliers.	• Communicate identified user groups/program needs to National Teams and Groups.
• Communicate regional needs to regional suppliers able to respond and to National Teams and Groups for review.	• Communicate national needs and related suppliers to Headquarters.	• Channel certain requirements to other FWS programs or external suppliers.
	• Review needs and related suppliers identified by Regional Teams/Headquarters.	• Screen BSP Project priorities; guide course of action by Regional Teams and National Teams and Groups.
	• Recommend to Headquarters the appropriate BSP, other FWS, or external course of action.	

STEP THREE: DEVELOPMENT OF INFORMATION AND TECHNOLOGY

REGIONAL TEAMS	NATIONAL TEAMS AND GROUPS	HEADQUARTERS
• Develop or supply access to regional information bases. • Participate in designing regional/national studies. • Manage regional studies in response to site-specific, localized needs in in subject areas of expertise. • Provide quick-response information search/technical assistance to regional users. • Review, modify, and repackage suppliers' products for regional use. • Influence other information development in the Region.	• Design/develop or supply access to comprehensive information bases. • Design and manage national/multiregional studies in assigned specialized subject areas. • Review studies/information base development under Regional Team management for quality control. • Provide major information search and synthesis/technical assistance to Regional Teams, Headquarters, and others. • Review, modify, and repackage suppliers' products for national use. • Participate in planning and designing FWS/other information development programs.	• Advise Habitat Preservation Program Manager on allocation of monetary/personnel resources among identified needs. • Guide development of regional/national studies and information development. • Execute agreements for cooperative information development with other FWS or outside programs. • Coordinate identification of, access to, and utilization of external information. • Review products/services for policy or management purposes.

STEP FOUR: DISSEMINATION OF INFORMATION AND TECHNOLOGY

REGIONAL TEAMS	NATIONAL TEAMS AND GROUPS	HEADQUARTERS
• Develop dissemination plans for Regional Team products; assist National Teams and Groups with regional components of national plans.	• Develop national dissemination plans for BSP products with Regional Team cooperation.	• Guide development of national/regional dissemination plans.
• Emphasize interpersonal contact, exhibits, briefings, workshops, etc.	• Emphasize print/audio-visual/electronic media, major conferences.	• Stipulate adequate monetary/personnel resources in Program Advices and Work Plans to ensure effective dissemination.
• Keep regional user groups informed of information transfer activities/products/services.	• Keep national user groups informed of information transfer activities/products/services.	• Maintain core mailing list for product distribution.
• Disseminate Regional Team/National Team and Group products to regional users.	• Make national/multiregional distribution of products with Regional Team assistance.	• Centrally distribute BSP products to national users, emphasizing technical bulletins, national conferences, etc.
• Train regional users in effective application of information/technology; advise other FWS regional suppliers in dissemination techniques.	• Train national user groups and Regional Teams in effective application of information/technology.	• Train own staff and Regional Teams/National Teams and Groups in transfer techniques, dissemination planning, and plan implemtation.

STEP FIVE: EVALUATION OF INFORMATION AND TECHNOLOGY

REGIONAL TEAMS	NATIONAL TEAMS AND GROUPS	HEADQUARTERS
• Participate in developing BSP evaluation criteria.	• Participate in developing BSP evaluation criteria.	• Establish quantitative/qualitative evaluation criteria to guide assessments by Regional Teams/National Teams and Groups.
• Apply criteria to evaluate usefulness/relevance of BSP products and services to regional users/needs.	• Apply criteria to evaluate BSP products and services with respect to national/multiregional needs and specified technical quality.	• Guide overall evaluation of progress toward BSP/FWS goals and objectives.
• Recommend improvements in BSP output to Headquarters to better satisfy regional needs.	• Participate with Regional Teams in recommending improvements to Headquarters.	• Recommend to Habitat Preservation Program Manager measures to improve products/services, considering recommendations of Regional Teams/National Teams and Groups.

APPENDIX B

MEMORANDUM FROM THE ASSOCIATE DIRECTOR - ENVIRONMENT AND RESEARCH, DATED JULY 19, 1977

ADDRESS ONLY THE DIRECTOR,
FISH AND WILDLIFE SERVICE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
WASHINGTON, D.C. 20240

In Reply Refer To
FWS/OBS

July 19, 1977

Memorandum

To: Service Directorate, Chiefs of Divisions and Offices, Director, Denver Service Center, Category and Program Coordinators

From: Associate Director - Environment and Research

Subject: Regional Information and Technology Transfer Implementation

The purpose of this memo is to present the findings of the Task Force on Regional Information and Technology Transfer, and to provide you with my tentative conclusions and immediate plans for implementing those findings.

Copies of the Task Force report are enclosed.

Summary of the Task Force Report

Although the National Teams, Research Centers, and other Service suppliers are now developing new ecological information and technology for habitat evaluation, environmental impact assessment, and other purposes, an effective information and technology transfer strategy must focus on four other functions:

o Better definition of users' requirements

o Improved adaptation of users' priorities

o Packaging and dissemination of products to meet users' needs

o Monitoring actual utilization and users' satisfaction.

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The Task Force proposes establishment of Regional Teams which will act as brokers between users and suppliers. They will promote information and technology to reinforce site-specific studies with long-range areawide planning. The Regional Team should represent all Service Programs, report to the Regional Director, and include a Technology Transfer Manager, an Information Transfer Specialist, Regional Activity Leaders, and Regional Coordinators.

Each Regional Team would be guided by a Regional Steering Group which should identify needs, set priorities, review operating procedures, oversee administration, and evaluate Regional Team performance. Permanent members of the Regional Steering Group should include Regional Directors, Assistant Regional Directors, Area Managers, the Public Affairs Officer, and the Technology Transfer Manager (ex officio).

In addition, a number of standby members should participate as requested, including representatives of Service suppliers, namely, National Teams and Groups, Research Centers, Laboratories, and Cooperative Units.

The Task Force recommends, in particular, the following actions:

- Establish Regional Teams in all Regions, covering all Service Programs
- Support new positions for Technology Transfer Managers and Information Transfer Specialists
- Provide new ceilings as needed for expanding Regional Teams
- Provide additional funds for contract support.

Recognizing that resource limitations would preclude immediate full implementation, the Task Force offered two implementation options:

A. Initially cover Habitat Preservation Programs and support only one new position per Region.

B. Initially establish Regional Teams in selected Regions.

Conclusions

We agree in concept with the Task Force Report. We also believe that the findings of the report should be implemented in FY 78, subject to certain clarifications or modifications as outlined below. Clarifications or modifications fall into four categories: (A) Clarification of functions; (B) Organizational arrangements; (C) Resources required; and (D) Service to Programs other than those in Habitat Preservation.

A. Clarification of Functions -

- Specific Regional activities within the five basic functions (page six of report and in above summary) need to be more fully defined and described in relation to similar and complementary actions of OBS National Teams and Headquarters. The current Committee working on functions of OBS National Teams and Headquarters will provide additional guidelines. However, I expect the Regions and OBS, while in the process of developing functional working procedures in FY 1978, to resolve any remaining problems concerning relevant functional responsibilities of the Regions, OBS Teams and OBS Headquarters.
- Three responsibilities, which were not explicitly included in the report, need to be addressed and resolved:
    - First, the Regional Biological Services Team would manage contract studies within the Region as specially assigned by Program Advice and/or as needed to carry out Regional activities of information and technology transfer.
    - Second, operational responsibilities such as Outer Continental Shelf leasing, geothermal leasing, etc., would not be managed by the Team. We propose that these be managed by Ecological Services at such time as this system becomes operative.
    - Third, we need to emphasize, as the Task Force report has not, that the Team has the responsibility for responding to needs of external users, especially allied Federal agencies such as the Forest Service, Bureau of Land Management, and Corps of Engineers. This is in keeping with the "ecological arm" concept envisioned for the Biological Services organization. Some guidance concerning priorities will have to be established, but the concept should be clearly articulated that external support is the responsibility of the Team.

B. Organization -

The two principal issues here are the role of the Technology Transfer Manager and the placement of the Team in the Regional organization:

- o The Task Force Report did not make it clear whether the Technology Transfer Manager should function as a Team Coordinator without managerial responsibility; a Team Leader with technical, not administrative, authority; or the head of the Biological Services personnel in the Region. We recommend the latter position--that is, that the Technology Transfer Manager be supervisor of the Biological Services personnel within the Regional Office. In effect, this would require a reversal of the previous position that the various senior Biological Services Regional Activity Leaders should all be on a peer level. It would, however, be consistent with the wishes of several Regions, and with the de facto way of operating in at least several of the Regions. Over the long run, this will make for a more efficient operating structure within the Region.

- o The Task Force Report recommends that the Team report directly to the Regional Director or his immediate designee. Our views on this are as follows:

  - In concept we agree, because this would put the Team in best position to serve all Programs within the Region, and not exclusively those Programs within the Habitat Preservation category. However, such an organizational change might be disruptive to the early phase of this effort and may prove unnecessary.

  - Therefore, initially we believe that the Team should continue to report directly to the Assistant Regional Director - Environment for line purposes. The proposed Regional Steering Group, with wide Regional representation should serve to assure that needs to service other Programs as appropriate would be identified, and that priorities established for the Team would reflect a wide Regional overview.

  - If in the future (see below) the Regional Team concept and capability expands to truly meet the needs of all Service Programs, then it might be desirable to have the Team report directly to the Regional Director, as a subsequent organizational step.

C. Resources required -

- o The Task Force basically recommends a new Technology Transfer Manager position and funds to support this position within each Region. Our position is that the implementation of these Teams should maximize the use of existing Biological Services positions within the Regions. Current Biological Services Regional staff members, particularly selected Regional Activities Leaders, should be trained and reassigned as Technology Transfer Managers; or current vacant RAL positions should be used. Further, we desire rigorous position standards and close Headquarters consultation in the actual selection of Technology Transfer Managers since those are key positions. (A suitable position description has been drafted by S&I staff and is now being classified by the personnel officer.)

- Provision will have to be made in five Regions for the position of Information Transfer Specialist (Region 3 and the Alaska Area Office are already staffed with this position). Since no additional positions have been provided for the Biological Services Program in FY 78, it might be necessary to staff these positions with permanent part-time appointees, IPA's or some other mechanism--at least initially. (PD will be supplied by S&I staff.)
- Ultimately, an additional position might have to be added to the Team, to support geographically based data and information management computer applications. Such a position has already been funded in Alaska. It may be eventually required for the Teams in other Regions--but we do not propose this in FY 78.

D. Service to Programs outside of Habitat Preservation -

The Task Force basically recommends the Team be set up to serve all FWS technology and information transfer needs in the Region--including all programs outside the Habitat Preservation category. We recognize this as being a desirable goal, but have some reservations concerning implementing it on a fully comprehensive basis from the outset. These are:

- I believe we need to show that we can make this work at the Habitat Preservation level before we propose to do it for everyone.
- We would have to add other skills to the Team to serve Programs such as Fisheries Resources, Animal Damage Control, etc. The present Biological Services cadre in the Regions has the subject matter skills to work largely in the environmental areas represented by the Habitat Preservation category.

Therefore, I take the following position on this issue:

- We are funded to serve Habitat Preservation and closely related needs--for example, we would certainly provide information to other Regional Programs (such as Endangered Species, Migratory Birds, etc.) where this can basically be done within the overall context of subject matter skills and resources available to us. Many of these other Programs do need habitat information of the same type as will have to be provided to support the Habitat Preservation Program.

- If Program Managers desire to explicitly support additional services beyond this in FY 78, we could accommodate this if they can provide additional funding. For example, this might involve funds to support contract operations to conduct major information searches, data synthesis, publications, and workshops, for other Regional Programs outside the Habitat Preservation category.

- Ultimately (perhaps by FY 79) we may wish to seek to make this a full-scale Information and Technology Transfer "all Programs" effort, depending upon demonstrated effectiveness, in which case, we may then propose to the other Program Managers that they assign additional dollars and people for these activities.

Implementation Plans

A. The Regional Directors will be briefed on the concept, through a series of visits to the individual Regions. Details of implementation in each Region will be discussed and planned. Joe Townsend will schedule and conduct these meetings during late July and early August.

B. The FY 1978 Program Advices will be amended to reflect the establishment of the Teams, as recommended by the Task Force, subject to the various modifications and adjustments resulting from the Regional meetings and as reflected above. Funding will be allocated as follows:

  - To Regions to support staff as outlined above,

  - To Regions and OBS to develop necessary procedures for carrying out the functions of information and technology transfer,

  - To Regions and OBS to plan and conduct training of appropriate personnel to assure that they can perform the specified functions effectively, and

- o To Regions to provide contract assistance for information searches, bibliographies, workshops, etc., --- all in accordance with functional procedures to be developed during FY 1978.

C. The Office of Biological Services will coordinate the development and implementation of this effort by working with the Regional staffs to:

- o Develop detailed procedures to guide Regional Team activities, and
- o Develop and conduct appropriate training for Regional Team members.

In summary, we basically concur with the Task Force Report but see need for some modification and Regional "tailoring" when it comes to implementation. We will implement this effort, after discussing it with you, through Program Advice Amendments scheduled to be written and sent to you in September.

Your written comments and recommendations concerning both the Task Force Report, this memo and the Regional meetings are requested by August 31.

F. Eugene Hester

Enclosure

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